

## ARTICLE 26

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### TREE PROTECTION STANDARDS

26-1 PURPOSE - The Urban County Government recognizes the importance of trees as a vital component in counterbalancing the effects of an urban setting by providing cooling shade; by reducing noise and glare; by significant contribution to urban aesthetics; by improving air quality through carbon dioxide reduction and replenishing oxygen to the atmosphere; by improving surface drainage and reducing the effects of storm drainage flooding; by filtering non-point source pollution from area streams; by stabilizing soil, thereby minimizing erosion; and providing habitat for wildlife. The purpose of this Article is to establish standards and procedures for county-wide tree protection and planting in new developments and redevelopments subject to review by the Planning Commission.

26-2 INTERPRETATION AND DEFINITIONS - The provisions of this Article shall be construed so as to liberally carry out its purpose in the creation and enhancement of an urban forest in Lexington-Fayette County. Words used in this Article shall be construed as having their common meaning or, when specified, as defined in other Articles in this Zoning Ordinance; except as they may be defined herein below:

BEST MANAGEMENT PRACTICES - A practice or usually a combination of practices that are determined by the Division of Engineering regulations to be the most effective and practicable means of controlling point and non-point source pollutants at levels compatible with environmental quality goals.

BOLE - The main stem of the tree structure, also considered the trunk of the tree, up to where main branches begin to stem.

BUFFER - A vegetation strip or management zone of varying size, shape, and character maintained along a stream, wetland, lake, road, recreation site, boundary, or different vegetative zone to mitigate the impacts of actions on adjacent lands; to enhance aesthetic effects; or use as a best management practice.

CRITICAL ROOT ZONE - A circular area surrounding a tree of which the center is the center of the bole of the tree and the radial measurement is one (1) foot per inch up to twenty-four (24) inches DBH and 1.5 feet per inch of trees over twenty-four (24) inches DBH.

DBH (Diameter at Breast Height) - The total cross sectional diameter in inches of a tree measured at a height of four and one-half (4½) feet.

DEVELOPABLE AREA - Net acreage as defined at the time of preliminary subdivision plat, and which may count any and all treed portions of designated Scenic Resource or Special Design Areas toward the tree canopy requirements herein.

DISTRESSED TREE - A tree that has been weakened from disease, insect infestation, lightning or wind storm injury, mechanical injury, or rotted wood; and the prospect for long time survival is diminished. The distressed condition could be either visible or not visible, as ascertained by the Urban Forester or documented in writing by an ISA certified arborist.

GREENWAY - A lineal open space system, as shown on the Comprehensive Plan Land Use Map, that is designed to conserve floodplains, abandoned railroads, and other linkage opportunities for use as stormwater management, natural resource protection, alternative transportation, recreation, and similar uses.

GRUBBING - The effective removal of understory vegetation from the site.

HEALTHY TREE - A tree that is relatively free from disease, insect infestation, lightning or wind storm injury, or rotted wood; and that has prospects for long time survival.

PERIMETER TREE - Any tree bole located within five (5) feet of the outer property line of a parcel to be developed.

PLANTING MANUAL - The listing of acceptable plant materials and their planting specifications as referenced in Article 18 of this Zoning Ordinance.

REMOVE OR REMOVAL - The actual removal of a tree by digging up, cutting down, knocking down; or causing mortality by chemical or other artificial means, or through damaging by girdling, nicking, topping, root cutting, trenching, grading within the critical root zone, filling, soil compaction, or any other means which lead to a weakened or mortal state.

RESIDUAL TREE - A tree retained in its original state and left on site after development.

RIPARIAN BUFFER - The vegetative strip of land influenced by and surrounding a water body or wetland composed of overstory and understory vegetation, which serves to maintain the integrity of the water system through

shading, sediment filtration, aquatic habitat enhancement, erosion control, and groundwater flow regulation.

**RIPARIAN SPECIES** - That vegetative species of trees and understory, which have adapted to conditions that constitute root systems surviving where there are shallow water tables; and can exist adjacent to streams, creeks, rivers, lakes, and in wetlands or other saturated soil conditions. Some examples of riparian species are Green Ash, Willow, Sycamore, Box Elder, and Cypress.

**SIGNIFICANT TREE** - A healthy tree that qualifies under one or more of the following criteria:

- a) The tree is an American Elm, Bur Oak, Blue Ash, Buckeye, Chinkapin Oak, Kentucky Coffeetree, Shellbark Hickory, Shumard Oak, or Yellowwood;
- b) The tree has a minimum DBH of thirty-six (36) inches;
- c) The tree is one of the following genera (closely related species) with a minimum DBH of twelve (12) inches: Carpinus (Hornbeam), Carya (Hickory), Fraxinus (Ash), Ostrya (Hophornbeam), Quercus (Oak), or Ulmus (Elm);
- d) The tree is listed as a State or National Champion; or
- e) The tree is investigated and determined by the Urban Forester or other appropriate state or federal governmental official to provide unique habitat for any endangered or threatened wildlife species protected by law.

**SILVICULTURE** - The art and science of controlling the establishment, growth, composition, health, and quality of forests and woodlands to meet the diverse needs and values of landowners and society on a sustainable basis.

**STOCKING LEVEL** - The number or density of vegetative plants, either in numerical terms or percentage levels of area, which are located on site or planted. Tree canopy coverage can be used as an indicator of a stocking level.

**TREE** - Any upright woody plant with one main stem and a minimum DBH of four (4) inches.

**TREE CANOPY** - The effective radial circumference area of a mature tree's vegetative cover, including all branches and leaves. The canopy can be conveyed in values of percentage area of total land space being assessed or by numerical measurement.

**TREE CANOPY COVERAGE** - The proportion of area on the ground or water covered by the spread of the outermost perimeter of foliage and commonly expressed in square feet or a percentage of the total ground area of the site.

**TREE PROTECTION AREA (TPA)** - Generally, a circular area surrounding a tree of which the center is the center of the bole of the tree and the radial measurement is one (1)

foot per inch up to twenty-four (24) inches DBH and 1.5 feet per inch of trees over twenty-four (24) inches DBH or a lesser distance, provided it will not adversely affect the health of protected tree(s) as determined by the Urban Forester.

**TREE PRESERVATION PLAN (TPP)** - A plan, which may be in either written and/or graphic format, describing and identifying existing trees, tree stands, and TPAs. The TPP will outline, with description and/or maps, the natural condition of the proposed development, proposed alteration of the wooded area with justification for said removal, protection measures for remaining trees, environmentally sensitive and any riparian areas, before, during, and after construction. The TPP will also contain replanting plans with locations.

**TREE STAND** - A grouping of at least 15 trees with continuing canopy coverage, or any other grouping of less than 15 trees as determined by the Urban Forester to be ecologically interdependent.

**URBAN FORESTER** - The individual or authorized agent employed and directed by the Lexington-Fayette Urban County Government to be responsible for carrying out the duties described in this ordinance and for administration, implementation, and overseeing of the various urban forestry and/or related duties.

**WETLAND** - Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas and are of a minimum size area as determined by Federal regulations

**26-3 APPLICABILITY OF STANDARDS** - The standards in this Article shall be applied to all major subdivision and development plans. All developments shall be required to demonstrate compliance with these standards through either preservation of healthy trees present on the site or, if sufficient existing trees to be preserved do not meet these standards, through planting of new trees in accordance with this Article. No development plan or subdivision plan shall be approved unless it is in compliance with the standards herein (see Article 26-5[c], Agricultural Standard Exemptions). Any areas that qualify as Environmentally Sensitive Areas under Article 6-10 of the Subdivision Regulations will be subject to the more restrictive regulations under that section.

**26-4 PROCEDURES** - The following procedures are required as an adjunct to review of proposals for development.

**26-4(a) ON-SITE MEETING** - Prior to the submission of an initial planning application (i.e., development plan or subdivision plan), the owner/developer shall contact the Urban Forester, who will determine if an on-site meeting

with the developer's design professional and/or pertinent LFUCG staff is necessary.

26-4(b) PRELIMINARY DEVELOPMENT PLAN REQUIREMENTS - A Tree Inventory Map (TIM), in a number of copies specified by the Division of Planning, shall be required to be filed as a part of any initial application for approval of a preliminary development plan. If a TIM is not provided at the time of filing in a full and complete form, the plan application shall not be considered as properly filed and may be rejected for submittal by the Division of Planning. This map shall be provided at the same scale as the preliminary development plan and shall contain the following information, at a minimum:

1. The locations of any tree clusters or stands, including perimeter fence line trees, fences, and any significant trees (showing the full canopy[ies] on both sides of a property line in accordance with Article 26-6[d], Perimeter Trees).
2. The species of trees noted above. This information can be generalized as a single note calling out any significant trees (4" + DBH, trees' genus, sizes, etc.).
3. Existing canopy coverage (location and extent expressed as a percentage of the property) to be included in the site statistics on the subdivision or development plan.
4. Location of blue-line or first-order streams and other water bodies.
5. Soil type and location.
6. Existing topographic contours in at least 5-foot intervals.
7. Location of Environmentally Sensitive Areas and features, such as sinkholes; slopes greater than 15%; floodplains; springs; wetlands; or other Environmentally Sensitive Areas (ESAs), as defined under the Land Subdivision Regulations.
8. Existing easements for utilities and other purposes.

26-4(c) FINAL DEVELOPMENT PLAN AND PRELIMINARY SUBDIVISION PLAN REQUIREMENTS - A Tree Preservation Plan (TPP) shall be required to be filed as a part of any initial application for approval of a preliminary subdivision or final development plan. If the TPP is not provided at the time of filing in a full and complete form, the plan application shall not be considered as properly filed and may be rejected for submittal by the Division of Planning. This report shall contain the following map and text information, at a minimum:

1. The information contained in the Tree Inventory Map, in a final form based upon field review information obtained since the preliminary development plan.
2. Proposed tree protection areas, including required buffers.
3. Proposed tree removal areas, including justification for removal and any mitigation measures to be taken.

4. Generalized planting plan and location for new trees as required in this Article (including trees required to satisfy other LFUCG landscaping requirements – see Articles 26-5[a] and 26-7). Sites not required to prepare a landscape plan per Article 18 of the Zoning Ordinance shall show planting requirements per the LFUCG Planting Manual and/or the LFUCG Stormwater Manual for riparian planting areas.
5. Sufficient information on proposed limits of grading, cut and fill areas, equipment storage areas, retaining walls, and, where appropriate, proposed detention areas, lot locations and similar activities, so that the impact on tree areas can be assessed.
6. Existing and preliminary easement locations for utilities and other purposes including type; i.e., above or underground.
7. Post-development canopy coverage and the methodology used under Article 26-5(d).

26-4(d) REVIEW OF DEVELOPMENT DESIGN - The basis for review of a TPP shall be the design of a development so as to protect and preserve the greatest number of trees as is reasonable and practical. Individual trees should be removed only as necessary to carry out permitted development under the approved zoning of the site and/or to achieve the objectives of the Comprehensive Plan such as to provide continuity in the design of collector streets, stormwater facilities, or similar infrastructure elements; and provided that the design of the development has maximized the preservation of tree stands and significant individual trees. Consideration should be given by the Planning Commission to alternative street cross-sections, street geometrics, or site design in accordance with Article 1-5, Variances, of the Subdivision Regulations, where the developer has established that trees will be properly preserved as a result of such alternative designs and/or techniques. The Planning Commission may approve waivers of street layout and grade requirements based on a thorough examination of alternative site concepts and a finding that the proposed waiver is the minimum necessary in achieving a safe and reasonable design.

26-5 TREE CANOPY STANDARDS - It is a part of the intent of this Article to establish the minimum tree canopy to be achieved during development for different categories of land use. The following are those standards, expressed as a minimum percentage of the total developable area of a parcel of land:

- All residential and non-residential uses in agricultural zones -- 30% of existing only\*
- All residential zones, including PUD-1, M-1P -- 30%
- B-2, B-2A and B-2B zones -- 0%
- P-1, P-2, B-1, B-3, B-5P, B-6P & CC zones -- 20%
- B-4, I-1, I-2 & ED zones -- 10%
- All Mixed Use zones -- 10%

\* Note: See Article 26-5(c) - Agricultural Standard Exceptions

26-5(a) SITES WITH INSUFFICIENT TREES - It is recognized that some sites do not have a sufficient number of trees to meet the tree canopy standards established above. In those situations, the existing trees on the site are to be retained to the maximum extent feasible, and additional trees are to be planted to meet the minimum canopy requirements. Any trees required to be planted and maintained by any other Article of the Zoning Ordinance and Land Subdivision Regulations shall be counted in determining compliance with the provisions of this section. Street trees required by the Subdivision Regulations, trees required by Article 18 of this Zoning Ordinance, and other trees planted on the property may be counted toward the canopy coverage requirements with the credit to be as provided in Section 26-5(d), as well as trees planted in and adjoining retention basins, when done in accordance with the LFUCG Stormwater Manual. Floodplain reforestation, when done in accordance with said Stormwater Manual, may be fully counted as the actual square footage of the land area to be reforested.

26-5(b) SITES THAT EXCEED THE STANDARD - It is further recognized that, in some situations, the site may have a tree canopy in excess of the minimum tree canopy established above. In those instances the development must ensure that the total canopy coverage shall not be reduced below the standards provided above. If existing trees are removed below that standard, new trees per Article 26-5(e) must supplement the loss to achieve the required canopy.

26-5(c) AGRICULTURE STANDARD EXCEPTIONS - The standards contained for the agricultural zones are intended to be applied only to existing tree canopies to be retained where the site is below the minimum canopy requirements on new development sites. New trees must be planted per Article 26-5(d) to replace any loss in the existing canopy in such cases. The standard shall not be considered as applicable to bona-fide agricultural and silvicultural uses exempted from zoning restrictions by state statute.

26-5(d) FENCING ALONG AGRICULTURAL LAND - The location of any required boundary fencing per Article 6-3 of the Land Subdivision Regulations may be located off the property line to protect designated trees in an approved TPP.

26-5(e) CALCULATION OF TREE CANOPY COVER - Tree canopy coverage may be determined by one of the following:

1. Existing Canopy Area:
  - a. By calculating the percent of cover in relation to developable area using aerial photography interpretation.

- b. By field measurement of the square footage of the existing tree canopy using the following formula:

$$C = \pi R^2, \text{ where}$$

$C$  = canopy area in square feet, and

$R$  = the radius of the canopy measured in feet

2. New Canopy Credit:

In areas where the predevelopment canopy is less than the canopy required by Article 26-5, a landscape credit shall be used to determine post development canopy for trees that are to be planted. Trees shall be planted in accordance with the landscaping requirements set forth in Article 18-4(c), Plants, of the Zoning Ordinance and the LFUCG Planting Manual for the following sizes of the trees. Landscape credit is given for planted trees only. The following credits represent categories of trees only, not installation sizes:

- a. Each Small Tree = 100 square feet
- b. Each Medium Tree = 400 square feet
- c. Each Large Tree = 750 square feet

Mass or grouped plantings of trees are encouraged in all cases. In the case of single family detached residential or similar fee simple lot development, the total number of required tree credits shall be reduced ten (10) percent of the portion of new tree credits planted in a common or public area.

26-5(f) WAIVER OF STANDARDS - Permission to waive the required canopy from the standards of Article 26-5 shall reside solely with the Planning Commission as a part of the plan approval process. Such waiver shall only be made by the Commission upon finding of one or more of the following:

- 1) The full application of the standards would constitute an undue hardship on the property by not allowing a reasonable use of the property. Restriction of some use of the property in order to preserve the trees shall not be deemed to be an undue hardship on the property.
- 2) The full application of the standards would constitute a safety hazard or other danger to the public welfare.
- 3) The full application of the standards would preclude necessary public facilities and that no other reasonable alternative exists.

26-5(g) TREATMENT OF DISTRESSED TREES - Any tree meeting the definition of a distressed tree shall not be permitted to be utilized for the purposes of meeting the requirements of this Article.

26-6 REQUIREMENTS FOR TREES IN SPECIAL LOCATIONS - The provisions of the following sections are designed to provide special conditions for trees intended to meet the overall site requirements of Article 26-5 above. The following

are listed in their order of priority based on the intent to maximize environmental integrity.

26-6(a) RIPARIAN TREES - It is recognized that riparian areas constitute unique habitat that require special treatment to protect and not impair the stream and its associated buffer. It is the intent of this Article to promote the conservation of riparian buffers. Due to their special benefits in managing flooding; enhancing water quality; filtering point and non-point source pollutants; cooling water by shading; providing habitat; and providing important aesthetic and recreational benefits, existing riparian trees shall be afforded the highest preservation and protection priority. The designation, size, and design of riparian buffers shall be in accordance with the provisions of the LFUCG Stormwater Manual. Construction and/or disturbance will not be permitted in the designated riparian buffer, except for the following activities, and only when deemed necessary and contained within an approved TPP:

1. Roadways and utilities;
2. Sanitary sewer, sewer manholes, and other utility access facilities;
3. Storm sewer pipe outlets;
4. Flood control basins and related practices or facilities;
5. Water quality practices that do not disturb below the normal top of the bank of the stream;
6. Pedestrian and bicycle paths and crossings.

The TPP shall provide written justification for removal of any existing trees or tree stands in a riparian buffer area designated on the TPP. Unless permitted for the above listed exceptions, grubbing is not permitted in any riparian area unless contained in an approved TPP. Water retention/detention areas already containing trees may be applied towards fulfilling the applicable canopy coverage requirements, provided drainage conditions will not be significantly altered and the trees are riparian species. In developments where a stream area exists and the overall residual canopy is less than the required amounts, plantings in the riparian buffer may be used to meet the canopy requirements. Any proposed reforestation shall be annotated in the TPP and carried out in accordance with LFUCG reforestation procedures and under the direction of the Urban Forester. Riparian buffer areas that are made available to the LFUCG for tree planting shall have appropriate notes and/or easements for that purpose added to the applicable subdivision and development plans and shall count the designated ground area toward canopy coverage requirements.

26-6(b) TREES IN STEEP SLOPE AREAS OR SINKHOLES - The next highest priority for preservation shall be trees located in areas of steep slope or within sinkholes where the sinkhole is to be left as open space. No trees shall be removed from any area with a slope exceeding 15% or a sinkhole without the prior approval of the Urban Forester.

26-6(c) GREENWAY TREES - No tree in an existing or planned greenway shall be removed without the prior approval of the Urban Forester. Trees shall be removed only if dead or distressed, or as necessary to achieve required sight distance for streets or similar safety related reasons.

26-6(d) PERIMETER TREES - Perimeter trees shall be eligible for inclusion in the calculation of required canopy only where a developer can demonstrate ownership of such trees and the ability to protect them during construction. The existing tree canopy of perimeter trees shall be retained. The actual tree canopy area covered shall count toward the requirements for the post-development canopy retention, even though portions of the canopy may lie outside the property boundary, provided that a private easement or similar instrument can be executed assuring the natural life of any off-site tree canopy(s) counted for the requirements here. If the development plan and the TPP indicate that disturbance near the perimeter trees is proposed, the canopy of the perimeter trees shall not be counted toward the requirements of Section 26-5 unless the disturbance will be located at or beyond the Tree Protection Area.

26-7 TREES ADJOINING DESIGNATED HISTORIC TURNPIKES - There are roads and road segments in the Rural Service Area that have been designated as "historic turnpikes" in the adopted *Rural Service Area Land Management Plan* (1999). For any such road or designated segment, no tree located within twenty (20) feet of the edge of pavement shall be removed without the following approvals:

Trees shall be removed only if dead or distressed as determined by the Urban Forester, or as necessary to achieve required sight distance for driveways or similar safety related reasons, as determined by the Urban County Engineer or designee.

26-8 APPROVAL OF TREE PROTECTION PLAN (TPP) - The proposed TPP shall be reviewed by the Urban Forester and his recommendation sent to the Planning Commission prior to their action of the related major Subdivision or Final Development Plan and any requested waivers in connection with Article 26. No grading, filling, or other construction activity shall commence on the property until the TPP has been approved by the Planning Commission. The following note shall be shown on all final plats: "In accordance with plans approved by the Lexington-Fayette Urban County Government, 'x number' of trees or tree canopy (whichever is more applicable) is/are required to be planted on this property per the approved tree protection plan specifications."

26-8(a) LANDSCAPE PLANS - Where landscape plans under Article 18 of the Zoning Ordinance are required for a site with an approved TPP, the TPP requirements and specifications shall be incorporated into the required Landscape Plan and under the supervision of the Division of

Building Inspection, and shall thereby be subject to all provisions and requirements under Article 18.

26-8(b) NO LANDSCAPE PLANS - Where TPPs do not involve a required landscape plan, the TPP shall be the controlling document for the location of TPAs, tree installations, and specifications contained therein. The same Planning Commission review and approval procedure shall apply to any proposed amendments of an approved TPP not involving a required landscape plan under Article 18.

26-9 TPP FIELD ADJUSTMENTS - The Urban Forester may permit removal of up to five (5) percent of the total canopy coverage required under an approved TPP, provided that there are unique physical features such as environmentally sensitive areas, stream crossing limitations, rock outcroppings, or historically significant sites that were not anticipated in the TPP approval process. Written documentation of the Urban Forester's approval is required. Any trees removed must be replaced in conformance with Article 26-5. Any removal in excess of 5% shall require a waiver under Article 26-5(e).

26-10 UTILITIES - All utilities or infrastructure, including the location of storm drainage and sanitary sewer systems, shall be designed so as to minimize disturbance of any Tree Protection Area, especially those associated with riparian areas. Where required, the reasonable removal of existing trees and/or location of new trees shall accommodate the placement and installation of such utilities. Where such utilities are located within the Tree Protection Area of such tree stands that their existence is threatened, such trees shall not count for compliance to the provisions of Article 26-5 above.

26-11 TREE PROTECTION DURING CONSTRUCTION - All areas designated for existing tree preservation on the Tree Preservation Plan shall be protected during construction activity. The boundary of the TPA shall be designed to protect each tree, tree stand, and riparian zone before and during construction. The landowner is responsible for ensuring the physical layout of the TPAs shown in the TPP are installed as approved. TPAs shall be added to all applicable plan drawings and amendments, including construction drawings submitted to the Division of Engineering. A TPA may vary widely in shape, but must extend a minimum of ten (10) feet beyond the existing tree canopy along the outer edge of the tree stand. The TPA shall provide for the following protection measures:

- 1) Fencing at least three (3) feet tall, clearly visible with signage posted every one hundred (100) feet, and lettered with 3-inch high letters clearly identifying the TPA shall be used to surround all tree protection areas. The tree protection fencing will be placed at a distance equal to or greater than the critical root zone of the tree(s) to be protected. Any proposed TPA areas less than the minimal standards can only be delineated by approval of the Urban Forester. Written approval by

the Urban Forester that the TPA requirements have been installed shall be provided to the Division of Engineering prior to approval of an erosion control plan and/or the issuance of any land disturbance permit or other construction activity. The fencing shall be maintained and remain standing until issuance of the Certificate of Occupancy or until the Urban Forester has determined that construction activity has ceased to the point that the fencing may be removed or that the fence may be relocated to permit final grading, provided the activity will not adversely affect the health of protected tree(s).

- 2) No vehicles, construction materials, equipment, fuel, or temporary or permanent earth fill shall be placed within a TPA. There shall not be any movement of any vehicles into, or within, a TPA. No nails, rope, cable, signs, or fencing is to be attached to a tree within a TPA.
- 3) Where construction activity is permitted within a TPA, the Urban Forester shall be notified before the starting date of the work so that the Division of Planning may be present to ensure minimal disturbance and compliance with provisions of the Tree Protection Plan.
- 4) Alternative protection methods may be used if determined by the Urban Forester to provide equal or greater tree protection.

26-12 PENALTIES - Penalties are set forth under Article 5-8 - Penalties for Violations, of the Zoning Ordinance, and Article 5-9 - Civil Citations and Civil Penalties. Each act or each healthy tree removed or damaged, except as described in the approved TPP, shall constitute a separate violation.